

While sand is found in areas of strong current, the majority of the estuary is covered in mud and fine silts. It is also predominantly shallow, except in the channels, with intertidal mudflats grading into shallow water, usually less than 2 meters deep.

Suisun Bay is a brackish body of water with many islands and sub-bays, crossed by tidal and river scoured channels. Fewer than 10 permanent macrobenthic species are found here because the area is inundated by freshwater each winter (Chambers, 1994). Mollusks, amphipods and polychete worms make up the benthic fauna, with the species mix depending on the salinity effects of river inflow. As in San Pablo Bay, the Asian clam, *Potamocorbula amurensis*, has taken over portions of Suisun Bay, particularly the Grizzly Bay portion, since its introduction in 1987 (Chambers, 1994).

San Francisco Bay is an important nursery area for Dungeness crab, a species of commercial interest in California. The crabs enter the Bay in May and June through the Golden Gate as juveniles, using the bottom current as the tide enters. They leave the Bay in August or September of the year following entry, having reached adult size (Chambers, 1994). The young crabs are abundant from Richardson's Bay up to Suisun Bay, being more abundant in the upstream areas in periods of low river inflow. During these low flow periods, the crabs would be in the project area, although no surveys have been done at the site to determine what types of environment they favor.

A wide variety of fish inhabit the Estuary including fish thought of as marine, estuarine, anadromous and freshwater species. Among them are various flatfish, surfperch, gobies, sculpin, bait and forage fish such as anchovies, herrings and smelt, pipefish, croakers, silversides, sharks and rays (US Army Corps of Engineers, 1998). For many of these species the Carquinez Strait is a strong barrier, with most species staying on one side or the other of the Strait.

Of particular interest are the anadromous fishes that pass through the Bay-Delta to spawn upstream, and then return through the Estuary to live in the ocean. These include Striped Bass (*Morone saxatilis*), American shad (*Alosa sapidissima*), Chinook salmon (*Oncorhynchus tshawytscha*), Steelhead trout (*Oncorhynchus mykiss gairdneri*) and the White and Green sturgeon (*Acipenser transmontanus* and *medirostris*) (US Army Corps of Engineers, 1998). The first two species are introduced, while the others are native. The Chinook salmon has been listed by both the State and Federal governments as an endangered species, and can be found throughout the Estuary, depending on life stage and season. The adults are present in the Bay area from November to May, while the young fish migrate downstream with peak populations January through April. Both adults and young use Suisun Bay, but their distribution is unclear.

The EIRs done for the various parts of the Wickland facility in 1973, 1974 and 1979 all cite a Bay area fishery study (Messersmith, 1966) that was based on work conducted in 1961-62. More recent studies have not appeared in the literature. The USFWS staff has commented on the importance of the Carquinez Strait as a "choke point" for the migration of all of the anadromous fish in the region, as pollution here could have a detrimental effect on all the